WHAT IS CLAIMED IS:

1.   A linear equalizer for a single carrier receiver, comprising:

a channel estimation unit estimating channel estimation values using a received signal inputted thereto and a generated field synchronizing signal;

a filter unit initializing coefficients of filters based on the channel estimation values and filtering a pre-ghost and a post-ghost of the received signal; and

an error calculation unit calculating an equalization error using an output signal from said filter unit.

2.   The linear equalizer according to claim 1, wherein said filter unit updates the coefficients of the filters according to the equalization error and filters the pre-ghost and post-ghost using the updated coefficients of the filters.

3.   The linear equalizer according to claim 1, wherein said channel estimation unit includes:

a correlation cumulation unit calculating and cumulating correlation values between the received signal and the field synchronizing signal; and

an estimation decision unit deciding the channel estimation values by applying a predetermined threshold value to the cumulated correlation values.

4.   The linear equalizer according to claim 1, further comprising:

a decision unit deciding a signal level for an output signal from said filter unit, wherein said error calculation unit calculates the equalization error using an input signal to said decision unit and an output signal from said decision unit.

5.   The linear equalizer according to claim 1, wherein said error calculation unit calculates the equalization error using the output signal from said decision unit and the field synchronizing signal.

6.   An equalizing method of a linear equalizer, the method comprising:

estimating a channel estimation value using a received signal and a field synchronizing signal;

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initializing coefficients of filters using the channel estimation value so as to remove a pre-ghost and post-ghost of the received signal;

calculating an equalization error to update the coefficients of said filters; and

updating the coefficients of said filters according to the equalization error, thereby filtering the pre-ghost and the post-ghost.

7.   The method according to claim 6, wherein the estimating the channel estimation value comprises:

computing and cumulating correlation values by using a correlation between the received signal and the field synchronizing signal; and

deciding the channel estimation value by applying a predetermined threshold value to the cumulated correlation values.

8.   A decision feedback equalizer for a single carrier receiver, comprising:

a channel estimation unit estimating a channel estimation value using a received signal inputted thereto and a generated field synchronizing signal;

a feed forward (FF) unit initializing coefficients of a first filter based on the channel estimation value, and filtering a pre-ghost of the received signal;

a feedback (FB) unit initializing coefficients of a second filter based on the channel estimation value, and filtering a post-ghost of the received signal; and

an error calculation unit calculating an equalization error using output signals from said FF and FB units.

9.   The decision feedback equalizer according to claim 8, wherein said FF and FB units update the coefficients of the first and second filters, respectively, according to the equalization error and filter the pre-ghost and the post-ghost using the updated first and second filters.

10.   The decision feedback equalizer according to claim 8, wherein said channel estimation unit comprises:

a correlation cumulation unit calculating and cumulating correlation values between the received signal and the field synchronizing signal; and

an estimation decision unit deciding the channel estimation value by applying a predetermined threshold value to the cumulated correlation values.

11.   The decision feedback equalizer according to claim 8, further comprising:

an adder adding the output signals from said FF and FB units to output a resulting signal;

a decision unit deciding a signal level for the output signal from said adder and inputting the resulting signal of the predetermined level to said FB unit,

wherein said error calculation unit calculates an equalization error using the input signal to said decision unit and the output signal of the predetermined level from said decision unit.

12.   The decision feedback equalizer according to claim 11, wherein said error calculation unit calculates the equalization error using the output signal from said adder and the field synchronizing signal.

13.   An equalizing method of a decision feedback equalizer, the method comprising:

estimating a channel estimation value using a received signal inputted thereto and a field synchronizing signal;

initializing coefficients of a first filter and a second filter to filter a pre-ghost and a post-ghost, respectively, of the received signal using the channel estimation value;

calculating an equalization error to update the coefficients of the first and the second filter; and

updating the coefficients of said first filter and said second filter according to the equalization error, thereby filtering the pre-ghost and the post-ghost.

14.   The method according to claim 13, wherein the estimating the channel estimation value includes:

calculating and cumulating correlation values between the received signal and the field synchronizing signal; and

an estimation decision unit deciding the channel estimation value by applying a predetermined threshold value to the cumulated correlation values.

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15.   A method of removing a multi-path signal from a received signal, comprising:

establishing a channel estimation value from a first signal and a second signal;

initializing filter coefficients to filter the multi-path signal based on the channel estimation value; and

updating the initialized filter coefficients according to an equalization error to remove the multi-path signal.

16.   The method of claim 15, wherein the multi-path signal comprises:

a pre-ghost of the received signal; and

a post-ghost of the received signal.

17.   The method of claim 15, wherein the estimating the channel estimation value comprises:

adding the first signal and the second signal.

18.   The method of claim 15, further comprising:

determining if a blind mode is selected;

outputting a predetermined signal from a decision unit if the blind mode is selected; and

selecting the received signal as the first signal and the predetermined signal as the second signal when the blind mode is selected.

19.   The method of claim 15, further comprising:

determining if a training mode is selected; and

selecting a field synchronizing signal as the first signal and an output signal from a filter having the updated filter coefficients as the second signal when the training mode is selected.

20.   A method of removing multi-path signal levels from a received signal, comprising:

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providing a channel estimation value according to a delay profile of the received signal;

converging filter coefficients on the multi-path signal levels using the channel estimation value and an equalization error.

21.   The method of claim 20, wherein the converging the filter coefficients comprises: initializing the filter coefficients with the channel estimation value.

22.   The method of claim 20, wherein the converging the filter coefficients comprises: updating the filter coefficients with the equalization error.

23.   The method of claim 20, wherein the converging the filter coefficients comprises: converging the filter coefficients having a finite impulse response.

24.   The method of claim 20, wherein the converging the filter coefficients comprises: converging the filter coefficients having an infinite impulse response.